

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently amended) A system for enabling components to transfer
2 data between each other, the system comprising:
3 a processor;
4 a memory;
5 a plurality of components including a first component having a data
6 object;
7 a universal data transfer interface which does not have ~~a priori~~ knowledge
8 of the components' ~~domain-specific~~ file system ~~domain~~ protocols or printer
9 domain protocols, prior to initiating a data transfer;
10 wherein the data object controls the universal data transfer ~~interface;~~
11 ~~and~~ interface;
12 wherein the file system protocols indicate how to access files over a
13 network; and
14 wherein the printer domain protocols indicate how to print and manage
15 print jobs over a network;
16 a second component capable of receiving the data object and invoking the
17 universal data transfer interface to cause a data transfer session object (DTSO) to
18 be sent to the second component, wherein the second component acts as an
19 intermediary component, which facilitates transferring of the DTSO from the first
20 component to a third component;

21 wherein the DTSO is capable of being invoked by the third component to
22 transfer data between the first component and the third component;
23 wherein the DTSO includes instructions to return data types supported by
24 the first component;
25 wherein the DTSO includes instructions that enable the first component to
26 receive asynchronous event notifications;
27 wherein the DTSO includes instructions to return device type and
28 operating status of the first component; and
29 wherein the DTSO includes instructions to enable the first component or
30 the third component to negotiate with each other to select a transfer medium to
31 use to transfer data based upon the type of data.

1 2. (Cancelled)

1 3. (Previously presented) The system as set forth in claim 1 wherein the
2 third component sends a second DTSO to the first component to be used by the
3 first component for receiving data transmitted from the third component.

1 4. (Previously presented) The system as set forth in claim 1 wherein the
2 third component receives the DTSO from the first component to be used by the
3 third component for receiving data transmitted from the first component.

1 5. (Previously presented) The system as set forth in claim 1 wherein the
2 universal data transfer interface and the DTSO have source-specific object-
3 oriented mobile code that can be interpreted and performed by the first
4 component or the third component.

1 6. (Previously presented) The system as set forth in claim 1 wherein the

2 DTSO comprises instructions to enable the first component or the third
3 component to negotiate with each other to transfer data, to select a
4 communications protocol configured to transfer data between each other based
5 upon a type of data to be transferred.

1 7. (Previously presented) The system as set forth in claim 1 wherein the
2 DTSO is configured to indicate completion responsive to expiration of a data
3 transfer lease by the first component or by the third component, or responsive to
4 the first component or to the third component indicating that the data transfer has
5 completed or failed.

1 8. (Currently amended) A system for enabling components to transfer data
2 between each other, the system comprising:
3 a processor;
4 a memory;
5 a first component having a first data object;
6 a second component having a second data object;
7 a first universal data transfer interface which does not have a priori
8 knowledge of the second component's ~~domain specific file system domain~~
9 protocols or printer domain protocols,
10 wherein the first data object controls the first universal data transfer
11 interface;
12 wherein the file system protocols indicate how to access files over a
13 network; and
14 wherein the printer domain protocols indicate how to print and manage
15 print jobs over a network;
16 a second universal data transfer interface which does not have a priori
17 knowledge of the first component's domain specific file system domain or printer

18 domain protocols, wherein the second data object controls the second universal
19 data transfer interface; and
20 a third component capable of receiving the first data object and the second
21 data object, and invoking the first universal data transfer interface and the second
22 universal data transfer interface to use a data transfer session object (DTSO) to
23 transfer data between the first component and the second component when the
24 first component has data to transfer to the second component, wherein the third
25 component acts as an intermediary component, which facilitates transferring of
26 the DTSO from the first component to the second component;
27 wherein the DTSO includes instructions to return data types supported by
28 the first component;
29 wherein the DTSO includes instructions that enable the first component to
30 receive asynchronous event notifications;
31 wherein the DTSO includes instructions to return device type and
32 operating status of the first component; and
33 wherein the DTSO includes instructions to enable the first component to
34 negotiate with the second component to select a transfer medium to use to transfer
35 data based upon the type of data.

1 9. (Previously presented) The system as set forth in claim 8 wherein the
2 third component sends the DTSO to the first component to be used by the first
3 component for receiving data transmitted from the second component.

1 10. (Previously presented) The system as set forth in claim 8 wherein the
2 third component sends the DTSO to the second component to be used by the
3 second component for receiving data transmitted from the first component.

1 11. (Previously presented) The system as set forth in claim 8 wherein the

2 DTSO is configured to indicate completion responsive to expiration of a data
3 transfer lease by the first component or the second component, or responsive to
4 the first component or the second component indicating that the data transfer has
5 completed or failed.

1 12. (Currently amended) A method for enabling a plurality of
2 components to transfer data between each other, the method comprising:
3 invoking, with a second component having a data object that
4 implements a universal data transfer interface, the universal data transfer
5 interface of a first component of a plurality of components to cause a data
6 transfer session object (DTSO) to be sent to the second component, wherein
7 the second component acts as an intermediary component, which facilitates
8 transferring of the DTSO from the first component to a third component; and
9 invoking the DTSO with the third component to transfer data between the
10 first component and the third component when the first component has data to
11 transfer to the third component;
12 wherein the universal data transfer interface does not have ~~a priori~~
13 knowledge of the components' ~~domain-specific file system domain protocols or~~
14 ~~printer domain protocols; protocols, prior to initiating a data transfer;~~
15 wherein the file system protocols indicate how to access files over a
16 network; and
17 wherein the printer domain protocols indicate how to print and manage
18 print jobs over a network;
19 wherein the DTSO includes instructions to return data types supported by
20 the first component;
21 wherein the DTSO includes instructions that enable the first component to
22 receive asynchronous event notifications;

23 wherein the DTSO includes instructions to return device type and
24 operating status of the first component;
25 wherein the DTSO includes instructions to enable the first component or
26 the third component to negotiate with each other to select a transfer medium to
27 use to transfer data based upon the type of data; and
28 wherein a session associated with data transfer is leased subject to
29 periodic renewal by the first component at an interval of time specified by an
30 initial lease duration parameter.

1 13. (Cancelled)

1 14. (Previously presented) The method as set forth in claim 12 further
2 comprising sending a second DTSO to the first component to be used by the first
3 component for receiving data transmitted from the third component.

1 15. (Previously presented) The method as set forth in claim 12 further
2 comprising receiving the DTSO from the first component to be used by the third
3 component for receiving data transmitted from the first component.

1 16. (Previously presented) The method as set forth in claim 12 wherein the
2 universal data transfer interface and the DTSO have source-specific object-
3 oriented mobile code that can be interpreted and performed by the first
4 component or the third component.

1 17. (Previously presented) The method as set forth in claim 12 wherein the
2 DTSO comprises instructions to enable the first component or the third
3 component to negotiate with each other to transfer data, to select a
4 communications protocol configured to transfer data between each other based

5 upon a type of data to be transferred.

1 18. (Previously presented) The method as set forth in claim 12 further
2 comprising configuring the DTSO to indicate completion responsive to expiration
3 of a data transfer lease by the first component or by the third component, or
4 responsive to the first component or to the third component indicating that the
5 data transfer has completed or failed.

1 19. (Currently amended) A method for enabling components to
2 transfer data between each other, the method comprising:
3 invoking a first universal data transfer interface of a first data object
4 belonging to a first component and a second universal data transfer interface of a
5 second data object belonging to a second component when the first component
6 has data to transfer to the second component, wherein the second component acts
7 as an intermediary component, which facilitates transferring of the DTSO from
8 the first component to a third component;
9 obtaining a data transfer session object (DTSO) from one of the invoked
10 first universal data transfer interface or the second universal data transfer
11 interface; and
12 using the DTSO to transfer data between the first component and the
13 second component;
14 wherein the universal data transfer interface does not have ~~a priori~~
15 knowledge of the components' ~~domain-specific file system domain protocols or~~
16 ~~printer domain protocols;~~ protocols, prior to initiating a data transfer;
17 wherein the file system protocols indicate how to access files over a
18 network; and
19 wherein the printer domain protocols indicate how to print and manage
20 print jobs over a network;

21 wherein the DTSO includes instructions to return data types supported by
22 the first component;
23 wherein the DTSO includes instructions that enable the first component to
24 receive asynchronous event notifications;
25 wherein the DTSO includes instructions to return device type and
26 operating status of the first component;
27 wherein the DTSO includes instructions to enable the first component or
28 the third component to negotiate with each other to select a transfer medium to
29 use to transfer data based upon the type of data; and
30 wherein a session associated with data transfer is leased subject to
31 periodic renewal by the first component at an interval of time specified by an
32 initial lease duration parameter.

1 20. (Previously presented) The method as set forth in claim 19 further
2 comprising sending the DTSO to the first component to be used by the first
3 component for receiving data transmitted from the second component.

1 21. (Previously presented) The method as set forth in claim 19 further
2 comprising sending the DTSO to the second component to be used by the second
3 component for receiving data transmitted from the first component.

1 22. (Previously presented) The method as set forth in claim 19 further
2 comprising configuring the DTSO to indicate completion responsive to expiration
3 of a data transfer lease by the first component or by the third component, or
4 responsive to the first component or to the third component indicating that the
5 data transfer has completed or failed.

1 23. (Currently amended) A computer readable medium having stored

2 thereon instructions for enabling components to transfer data between each other,
3 which when executed by one or more processors, causes the processors to
4 perform:

5 invoking, with a second component, a universal data transfer interface of a
6 data object belonging to a first component of a plurality of components to cause a
7 data transfer session object (DTSO) to be sent to the second component when the
8 first component has data to transfer to a third component, wherein the second
9 component acts as an intermediary component, which facilitates transferring of
10 the DTSO from the first component to the third component; and

11 invoking the DTSO with the at least one of the plurality of components to
12 transfer data between the first component and the third component;

13 wherein the universal data transfer interface does not have ~~a priori~~
14 knowledge of the components' ~~domain-specific file system domain protocols or~~
15 printer domain ~~protocols~~; protocols, prior to initiating a data transfer;

16 wherein the file system protocols indicate how to access files over a
17 network;

18 wherein the printer domain protocols indicate how to print and manage
19 print jobs over a network;

20 wherein the DTSO includes instructions to return data types supported by
21 the first component;

22 wherein the DTSO includes instructions that enable the first component to
23 receive asynchronous event notifications;

24 wherein the DTSO includes instructions to return device type and
25 operating status of the first component;

26 wherein the DTSO includes instructions to enable the first component or
27 the third component to negotiate with each other to select a transfer medium to
28 use to transfer data based upon the type of data; and

29 wherein a session associated with data transfer is leased subject to
30 periodic renewal by the first component at an interval of time specified by an
31 initial lease duration parameter.

1 24. (Cancelled)

1 25. (Previously presented) The medium as set forth in claim 23 further
2 comprising sending a second DTSO to the first component to be used by the first
3 component for receiving data transmitted from the third component.

1 26. (Previously presented) The medium as set forth in claim 23 further
2 comprising receiving the DTSO from the first component to be used by the third
3 component for receiving data transmitted from the first component.

1 27. (Previously presented) The medium as set forth in claim 23 wherein
2 the universal data transfer interface and the DTSO have source-specific object-
3 oriented mobile code that can be interpreted and performed by the first
4 component or the third component.

1 28. (Previously presented) The medium as set forth in claim 23 wherein
2 the DTSO comprises instructions to enable the first component or the third
3 component to negotiate with each other to transfer data, to select a
4 communications protocol configured to transfer data between each other based
5 upon a type of data to be transferred.

1 29. (Previously presented) The medium as set forth in claim 23 further
2 comprising configuring the DTSO to indicate completion responsive to expiration
3 of a data transfer lease by the first component or by the third component, or

4 responsive to the first component or to the third component indicating that the
5 data transfer has completed or failed.

1 30. (Currently amended) A computer readable medium having stored
2 thereon instructions for enabling components to transfer data between each other,
3 which when executed by one or more processors, causes the processors to
4 perform:

5 invoking a first universal data transfer interface of a first data object
6 belonging to a first component and a second universal data transfer interface of a
7 second data object belonging to a second component when the first component
8 has data to transfer to the second component, wherein the second component acts
9 as an intermediary component, which facilitates transferring of the DTSO from
10 the first component to a third component;

11 obtaining a data transfer session object (DTSO) from one of the invoked
12 first universal data transfer interface or the second universal data transfer
13 interface; and

14 using the DTSO to transfer data between the first component and the
15 second component;

16 wherein the universal data transfer interface does not have ~~a priori~~
17 knowledge of the components' ~~domain-specific file system domain protocols~~ or
18 printer domain ~~protocols~~; protocols, prior to initiating a data transfer;

19 wherein the file system protocols indicate how to access files over a
20 network; and

21 wherein the printer domain protocols indicate how to print and manage
22 print jobs over a network;

23 wherein the DTSO includes instructions to return data types supported by
24 the first component;

25 wherein the DTSO includes instructions that enable the first component to
26 receive asynchronous event notifications;
27 wherein the DTSO includes instructions to return device type and
28 operating status of the first component;
29 wherein the DTSO includes instructions to enable the first component or
30 the third component to negotiate with each other to select a transfer medium to
31 use to transfer data based upon the type of data; and
32 wherein a session associated with data transfer is leased subject to
33 periodic renewal by the first component at an interval of time specified by an
34 initial lease duration parameter.

1 31. (Previously presented) The medium as set forth in claim 30 further
2 comprising sending the DTSO to the first component to be used by the first
3 component for receiving data transmitted from the second component.

1 32. (Previously presented) The medium as set forth in claim 30 further
2 comprising sending the DTSO to the second component to be used by the second
3 component for receiving data transmitted from the first component.

1 33. (Previously presented) The medium as set forth in claim 30 further
2 comprising configuring the DTSO to indicate completion responsive to expiration
3 of a data transfer lease by the first component or by the third component, or
4 responsive to the first component or to the third component indicating that the
5 data transfer has completed or failed.